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Intra-Generic Difference in Chromosome Numbers of Spiny Mice (Rodentia: Murinae)

Spiny Mice of the genus *Acomys* form a well defined group of chiefly African distribution. Some forty forms were named, many of which seem to be of doubtful validity[1]. Two species are known to occur in the Southern Palaearctic region, namely *Acomys cahirinus* and *Acomys russatus*, which are readily distinguishable. Both are found in Israel; the first occurs everywhere in the mountainous habitats of the country, whereas the second is restricted to more or less arid localities.

No representatives of this group were so far examined cytologically. An analysis of the chromosome complements of the local species gave the following results:

Species	2*n*	*Sex chromosomes*	*No. of* ♂♂ *examined*
Acomys cahirinus Desmarest	38	XY	5
Acomys russatus Wagner	66	XY	2

Although the chromosome complements of these species are entirely different with regard to the number of the elements, the relationship which might exist between the karyotypes suggests itself on the morphological examination of the diploid set. *Acomys cahirinus* possesses comparatively long autosomes, all of them metacentric or sub-metacentric except for four tiny elements which are markedly smaller than the remainder and in which the centromere has not yet been demonstrated. *Acomys russatus*, on the other hand, shows only a graded series of short autosomes in which the position of the centromere has not been established with certainty. The X and Y chromosomes and the form of the sex bivalent are similar in both species. The X chromosome can be identified in spermatogonial metaphase plates, being the largest element in *Acomys russatus* and one of the largest in *A. cahirinus*. The Y chromosome is one of the smallest elements in both cases. Thus the total amount of chromatin is very similar in the two species in spite of the difference in the chromosome numbers.

The chromosome counts reported here are based on the observation of spermatogonial metaphase plates as well as of first and second meiotic divisions. All were made on squash preparations after pre-treatment of the testicular tubules with a diluted Tyrode solution. This technique was developed following a suggestion by Hughes[2]. The results are comparable with the micro-photographs published recently by Hsu[3] and are far better than those obtained by other squash methods and water pre-treatments which were tried by us on a variety of Rodents. This technical improvement makes the observation of Mammalian chromosomes almost as easy and accurate as that of groups which have the reputation of being more favourable for cytological examination.

The detailed results of this investigation will be published elsewhere.

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